

REMARKS

Claims 1-40 are pending in the above application. Claims 1, 2, 4-7, 9, 11, 13-17, 20, 22, 23, 26-28, 30-31 stand rejected under 35 U.S.C. §102 as being anticipated by Inoue, U.S. Patent No. 5,447,574. Claims 3 and 21 stand rejected under 35 U.S.C. §103 as being unpatentable over Inoue in view of Scheiter, Jr., U.S. Patent No. 5,161,557 and Rendemonti, U.S. Patent No. 3,891,149. According to the Office Action, Scheiter discloses rotary nozzles and Rendemonti discloses a piston pump which would have been obvious modifications to the device of Inoue. Claims 8, 12, and 24 also stand rejected under 35 U.S.C. §103 as being unpatentable over Inoue in view of Larson, U.S. Patent No. 4,949,423. The Larson reference discloses photoelectric sensors and an ultrasonic sensor to detect the vehicle which, according to the Office Action, would have been obvious features to include in the system of Inoue to render the identified claims obvious. Claims 10, 18, 19, 29, and 32 are rejected under 35 U.S.C. §103 as being obvious modifications of the system of Inoue. Claim 25 stands rejected under 35 U.S.C. §103 as being unpatentable over Inoue in view of Tamburri, U.S. Patent No. 2,981,266. According to the Office Action, the mobile cash washing system of Tamburri would have been an obvious modification to the Inoue device. Claims 33-39 stand rejected under 35 U.S.C. §103 as being unpatentable over Inoue in view of Scheiter because, as stated in the Office Action, the rotary nozzle of Scheiter would have been an obvious modification to the Inoue system. Finally, claim 40 stands rejected under 35 U.S.C. §103 as being unpatentable over Inoue in view of Scheiter and further in view of Tamburri. Again, the mobile structure of Tamburri, according to the Office Action, would have been an obvious modification to the combined teachings of Inoue and Scheiter.

Applicants respectfully traverse the rejections under 35 U.S.C. §102 and §103. Many substantial differences exist between the claimed invention and the cited reference. Applicants noted many of these differences in response to the Office Action dated June 12, 2003. The present Office Action does not dispute most of Applicants' arguments. Rather, the present Office Action focuses on only two of the claim aspects –

detecting the vehicle and delaying a first time period. Neither of these claimed features are taught or suggested by the Inoue reference. Nevertheless, these claimed features have been further highlighted by the present amendments.

In particular, the Office Action continues to incorrectly apply the articulating car-washing device of Inoue to the stationary device of the present invention which reacts in real-time as a vehicle passes underneath. Applicants respectfully submit that no fair reading of Inoue teaches or suggests the present invention as claimed in independent claims 1, 13, 26 and 33. The Inoue reference discloses an automatic car washing apparatus comprising a portal frame 3 that is movable relative to a vehicle to be washed. At all times, the vehicle is stationary in the Inoue device. Further, the Inoue reference clearly does not output a vehicle detection signal in response to vehicle movement under the control of the vehicle operator. Col. 9, lines 30-39 of Inoue makes it clear that the vehicle is stopped, i.e. parked, at a location and a person operates an operator panel to activate the system. Nothing in Inoue happens "in response to vehicle movement" as claimed in the present invention.

The Inoue reference is primarily concerned with accurately moving an upper nozzle and side nozzles with respect to the vehicle body profile as recognized by a plurality of photo sensors arranged in the vertical direction on the sides of the portal frame. Importantly, "the vehicle body 2 is stopped at a specified washing position with respect to the portal frame 3". ('574 patent at Col. 9, Ins. 30-31). The portal frame is then moved forward along rails by a drive mechanism wherein the photo sensors on the front surface of the portal frame detect the vehicle body profile. A vehicle washing sequence then takes place. Thus, the portal frame with the washing mechanisms reciprocates back and forth across a stationary vehicle under the control of a drive mechanism to wash, rinse and dry the vehicle. An "important object" of the Inoue reference is to accurately articulate the nozzles with respect to the vehicle body profile including raising or lowering the nozzles at high speed to eliminate any non-uniformity of washing while the profile of the vehicle body changes.

In addition, Inoue does not disclose or suggest delaying a first time period while the vehicle is moving underneath the apparatus, as in the present invention. The "delay" attributed incorrectly to the Inoue reference by the Office Action occurs while the vehicle profile is being determined during a first pass of the gantry. The entire vehicle, while stationary, is then washed/sprayed during a second pass of the system.

In contrast, the present system determines the vehicle profile in real-time and activates the sprayer to spray only the truck bed during a single pass of the vehicle while moving under the sprayer system. Thus, the Applicants respectfully submit that independent claims 1, 13, and 26, and the corresponding depending claims, are novel with respect to the Inoue reference because each claim recites a stationary fluid application system for applying fluid to a moving vehicle driven by an operator, which the Inoue reference does not teach.

In other words, the vehicle, under the control of a driver, is moved with respect to the stationary fluid application system. In this regard, the fluid application system of the present invention is particularly useful for applying asphalt release agent to asphalt delivery trucks prior to the trucks receiving a load of asphalt for delivery to a job site. Because the vehicles are driven by an operator under a fixed spray boom, the rate at which they pass through the fluid application system can vary. Hence, the vehicle detection signals in response to vehicle movement occur in real-time as the vehicles driven under the spraying mechanism. The vehicle detection signal, thus, alerts the fluid application system that a vehicle is present under the spray boom. Because only the truck bed of the vehicle is desired to be sprayed with asphalt release agent, each of claims 1, 13, and 26 require that the system delay for a first time period during which time the spray unit is inactive while the vehicle continues under the spray unit.

Thus, in addition to the stationary aspect of the present system, Applicants traverse the suggestion in the Office Action that the Inoue reference discloses Applicants' claimed first time delay period. To the extent any "delay" is taught by Inoue, it is merely a processing delay to determine the profile of the stationary vehicle. It does not relate to de-activating the sprayer while the vehicle is driven under the unit.

It is not a first delay as a function of the vehicle detection signal as claimed in the present invention. Thus, for at least the foregoing reasons, claims 1, 13, and 26 are novel notwithstanding the Inoue reference. In the same manner, independent claims 2, 4-7, 9, 11, 14-17, 20, 22, 23, 27, 28, 30 and 31 are novel in view of the Inoue reference.

With respect to claim 2, Applicants respectfully traverse the suggestion in the Office Action that Inoue discloses first and second fluid sources in fluid communication with the pump to communicate a mixture of the fluid sources to the spray unit. To the contrary, the Inoue reference discloses that each fluid source has its own associated pump and that the side nozzles 9a, 9b are connected to each of the pumps such that they can dispense the particular fluid or mixture of fluid contained in the associated fluid reservoir. For this additional reason, claim 2 is not anticipated by the disclosure of Inoue.

With regard to claim 4, Applicants submit that claim 4 is novel because that claim recites a plurality of nozzles at a first end of the boom supported over a detected vehicle which the Inoue reference does not teach. The citation to Column 4, lines 18-19 in Inoue does not support the rejection, as the side nozzles are not over the detected vehicle. Moreover, only one overhead nozzle is disclosed in the Inoue reference, which nozzle is moved laterally as the vehicle passes underneath the traveling frame.

With regard to claim 15, Applicants traverse the suggestion in the Office Action that the features claimed therein are disclosed in the Inoue reference. Again, with respect to the nozzle supported over the detected vehicle, no automatically variable fluid mixture ratio mechanism is disclosed in Inoue. The nozzles of the Inoue system spray detergent, water, or a pre-mixed ratio of water and wax to the vehicle being cleaned. There is no teaching or suggestion in Inoue that the strength of the detergent or the ratio of the water and wax mix are modified in any way in response to the particular type of vehicle detected. Thus, for at least these additional reasons, claim 15 is novel notwithstanding the Inoue reference.

Similarly, with regard to claim 17, multiple fluid conduits are not disclosed or suggested in the Inoue reference for the nozzle located over the vehicle for spraying the variable ratio fluid mixtures of claim 15.

Regarding the obviousness rejections of claims 3 and 21, Applicants submit that the combination of Inoue, Scheiter and Rendemonti would not render obvious the Applicants' claimed invention because the references, either alone or in combination, do not disclose or suggest each and every feature of the claimed fluid application system. As noted above, independent claims 1 and 13, from which claims 3 and 21 depend respectively, recite several features not disclosed or suggested in the Inoue reference. In addition, Applicants submit that one of skill in the art would not be motivated to modify the device of Inoue to include the rotary nozzles of Scheiter because such nozzles provide a less accurate spray pattern. Rotary nozzles are desirable for broad area coverage. Hence, they are beneficial for spraying truck beds, for example, from a stationary overhead boom, as disclosed in the example of the present disclosure. Such nozzles, however, are not necessary or desirable in the system of Inoue because that system is primarily concerned with accurately directing the spray patterns to uniformly wash the vehicle under consideration. Rotary nozzles would be counterproductive to this objective and add unnecessary expense and complexity to the system of Inoue. Thus, for the foregoing reasons, Applicants submit that claims 3 and 21 are non-obvious in view of Inoue, Scheiter and Rendemonti.

With regard to claims 8, 12, and 24, Inoue only discloses a plurality of photoelectric detection means arranged vertically in the sides of the portal frame. No distance sensing mechanisms other than the contact sensors 54 are disclosed in the overhead position on the portal frame of Inoue. This is because the Inoue reference is concerned with raising and lowering the spray nozzles with respect to the vehicle profile as seen from the side. In other words, Inoue attempts to prevent contact of the overhead nozzle with any portion of the vehicle. In contrast, the present invention is concerned with detecting and approximately locating the vehicle truck bed which may be several feet below the top of the vehicle side profile. Hence, the present invention

claims an ultrasonic sensor to "see" the drop from the passenger cabin to the floor of the truck box. The photoelectric sensors of Inoue are more accurate for tracking the highest point of the vehicle profile as the portal frame passes over the vehicle. Using ultrasonic sensors in Inoue could result in the system contacting the vehicle if the overhead gantry believes it sees the "top" of the vehicle when, in reality, it is sensing a recessed vehicle feature. Hence, Applicants traverse the suggestion in the Office Action that one of skill in the art would be motivated to modify the Inoue reference in view of Larson to include ultrasonic sensors or a combination of photoelectric and ultrasonic sensors as claimed in the present invention.

With regard to claims 10, 18, 19, 29, and 32, Applicants submit that these claims are non-obvious in view of the Inoue reference because the Inoue reference discloses a different device directed toward solving a different problem than the present invention. Hence, no reason has been shown why one of skill in the art would modify the Inoue reference as the Office Action proposes. The Inoue reference is not pertinent to the problem of finding the bed of a truck for spraying the interior thereof as addressed by the present invention. Thus, claims 10, 18, 19, 29, and 32 are non-obvious in view of the Inoue reference itself, as the Inoue reference lacks any teaching, motivation, incentive or suggestion for modifying the device therein to arrive at the invention of claims 10, 18, 19, 29, and 32.

With regard to claims 33-39, Applicants submit that one of skill in the art would not be motivated to modify the Inoue device to include rotary nozzles for the same reasons as discussed above with respect to claims 3 and 21. Namely, rotary nozzles do not provide the accurate spray patterns desired by the Inoue device and are more appropriate for the fixed boom system contemplated by the present invention as opposed to the movable gantry system of Inoue.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-40 are in a proper condition for allowance. A Notice of Allowance indicating the same is therefore earnestly solicited. The Examiner is invited to telephone the Applicants' undersigned attorney at (248) 223-9500 if any unsolved matters remain.

Respectfully submitted,

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